Blood-Stream Infection (CDC)

From: Tim Royer [we2frogs@oz.net]
Sent: Monday, November 30, 2009 1:54 PM
To: Blood-Stream Infection (CDC)
Subject: Draft Guidance for the Prevention of Intravascular Catheter-Related Infection

Comments from Timothy Royer, RN, BSN, CRNI, (Vascular Access Nurse Manager - VA PSHCS, Seattle, WA - Retired, April 2009)

Here are my recommendations and comments:

Lines 265 -266. Lines 276 -279 [61, 81]. Specialized "IV teams" have shown unequivocal effectiveness in reducing the incidence of catheter-related infections, associated complications, and costs [62-72]. Additionally, infection risk increases with nursing staff reductions below a critical level [76].

Comment - This is good that this is a Category IA.

Lines 1078 – 1079. 6. When needleless systems are used, the split septum valve is preferred over the mechanical valve due to increased risk of infection [336-339]. Category II

Comment:
This guideline is not supported by the evidence because you did not reference the many studies that found a decreased risk of bloodstream infection with mechanical valves and these four studies you list as support had many confounding issues not the least of which was the fact that three of these reports admit to not following the mechanical valve manufacturer's recommendations for use.

You only listed the studies that indicate that mechanical valves are an increased risk. You did not list the studies that stated they did not. At my former institution, VA Puget Sound Health Care System, Seattle Washington, we used positive displacement mechanical valves with a swabable surface area and were able to decrease the CA-BSI rate to zero and maintained that rate from February 2007 to September 2009 (19 months). Prospective study is being written for publication. The 19 months of zero CA-BSI was with a clear housed mechanical positive displacement valve.

Additional evidence showing reduction in CR-BSI using mechanical positive displacement valves:
CASEY, A.L. et al *A randomized, prospective clinical trial to assess the potential infection risk associated with the PosiFlow needleless connector* Journal of Hospital Infection 2003 Vol. 54 288-293

COSTELLO, J. MD, et al. *Systematic intervention to reduce central line-associated bloodstream infection rates in a pediatric cardiac intensive care unit.* Pediatrics 2008; 121:915-923.

HARNAGE, SOPHIE BSN RN *Achieving Zero Catheter Related Bloodstream Infections: 15 Months Success in a Community Based Medical Center* Journal of Vascular Access 2007 Volume 12 Number 4 218-225

LEONE, M. BSN *Catheter Outcomes in Home Infusion* Journal of Infusion Nursing 2008 Vol. 31 No. 2 84-91

YEBENES, J. C. et al *Safety of positive-pressure valve connectors in arterial catheters inserted into*

critically ill patients Journal of Hospital Infection 2008
Volume 70, 341-345

GORSKI, L. MS, APRN, BC, CRNI, FAAN, et al. *The IHI Central Line Bundle: Members of the Infusion Nurses Society discuss its impact.* Infection Control
Resource. Vol. 5 No. 2, 2-5, 2009

KNIGHT, T. MD, ANDERSON, K. MT, CIC et al. *Reducing central venous catheter infections in the intensive care unit: A multidisciplinary approach.*
Building Quality in Healthcare. Vol. 2 No. 1. 2008

GARCIA, R. MMT (ASCP), et al. *A Study of the Effects on Bacteremia and Sharps Injury Rates after Introduction of an Advanced Luer Activated Device (LAD)*
for Intravascular Access in a Large Hospital Setting. American Journal of Infection Control: June 2007; 35 (5); E75.

May this additional evidence would also better support your recommendation of a Category II. However, with the addition of the references above this recommendation should be considered an "Unresolved Issue".

I do applaud your recommendation that (lines 1124 – 1126) that opaque devices cause poor visualization of the fluid flow pathway and prevent the visualization of internal corrugations that could harbor organisms, particularly if the catheters are used to access blood.

1361 – 1364 – Category IA

Comment:
I totally support and glad to see that the evidence is there.

1388 – 1392 – Weigh the risk and benefits of placing a central venous device at a recommended site to reduce infectious complications against the risk for mechanical complications (e.g., pneumothorax, subclavian artery puncture, subclavian vein laceration, subclavian vein stenosis, hemothorax, thrombosis, air embolism, and catheter misplacement) [25, 86-101]. Category IA

Comment:
Good! Again good to see that the evidence is there. One of the most important aspects of preventing infection is critical thinking about the patient when deciding on appropriate care.

Thank you for the opportunity to comment.

Timothy Royer, RN, BSN, CRNI